

# **DIGITAL DIVIDE IN THAILAND: ANALYSIS AND RECOMMENDATIONS**

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## **ABSTRACT**

*Nowadays, developing countries are using Information and Communications Technology (ICT) to bridge the gap in knowledge access and social equality for their people. It is widely recognized that bridging the digital divide can promote literacy, democracy, social development, public services equality, and sustainable economic growth. Digital divide, therefore, is an obstacle to sustainable national development that could help countries advance to the age of digital economy. In Thailand, ICT development and mobile penetration are strongly correlated with economic growth and social benefits. The Thai government, regulators, and other stakeholders are encouraging the ICT industry to provide communications and services for all by fostering investment and removing regulatory bottlenecks. The objective of this paper is to analyze the digital divide in Thailand and gives recommendations to the government and regulators to provide supportive policies to reduce the digital divide.*

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## **1. INTRODUCTION**

In 2009 the World Food Programme (WFP) launched a food-aid project via mobile phones by testing distribution of food coupons to refugees settling in Damascus, Syria. The distributed coupons could be redeemed for food at participating shops in the city and the project was a resounding success with over 130,000 refugees benefiting from it [1].

Accordingly, WFP decided to expand the project so as to reach more food-deficient refugees. Part of its success was attributable to the availability of cheaper mobile phones which facilitated and expanded the access and usage of mobile phones.

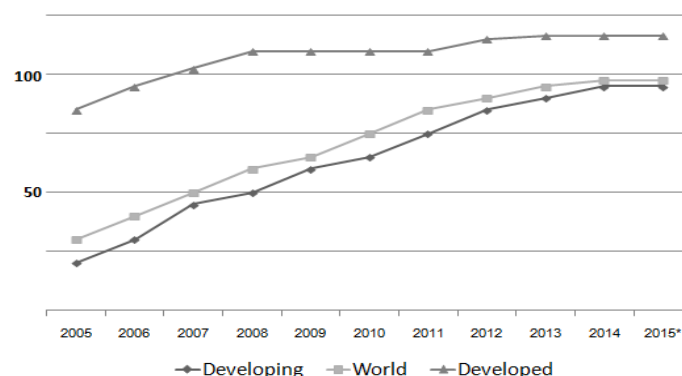
Now mobile phones are an essential daily-life tool rather than a luxury. A shortage of basic telecommunication services creates increasing problems for living in a modern society. The access of basic telecommunication services, however, is still at varying level from one community to another, resulting in unequal opportunities of benefiting from modern marketing services. Access to information technology creates and expands economic opportunities for users of these services, raises work efficiency and cuts production costs that are related to capital accumulation, an essential factor of economic expansion that can be split into two parts: 1) Physical capital namely machinery, and 2) human capital namely labor skills. Information technology furnished by service providers raises labor skills and increases human capital that plays a key roll in economic growth.

Unequal access to information technology, the so-called digital divide, deprives certain sections of population of new and ever increasing economic and technological advances in our modern market systems, for instance movies via Internet, video conferences, virtual classrooms, which all require high-speed Internet links. It is widely recognized that bridging this digital divide can promote literacy, democracy, social dynamics, economic equality, and sustainable economic growth. Digital divide, therefore, is an obstacle to sustainable national development that could help countries advance to the age of digital economy.

To achieve the objective of the research, this paper organizes as follows. Section 2 explains how to measure the digital divide. Section 3 discusses on the digital divide in Thailand. Section 4 provides conclusion and policy guidelines.

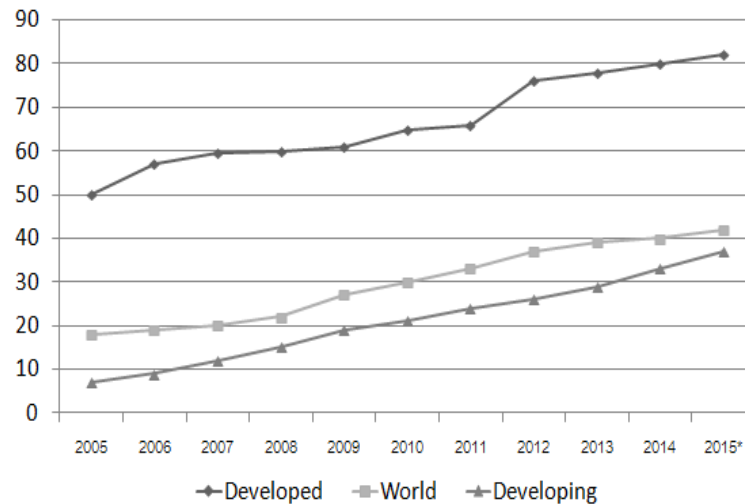
## 2. HOW TO MEASURE DIGITAL DIVIDE

The definition of Digital Divide changes with time. In the 20th century, Digital Divide referred to varying levels of access to traditional and mobile telephone services, the gap of which in developing and developed countries had been bridged and filled by current universal access to mobile phone services to the point of almost non-existing. Statistics of the International Telecommunication Union (ITU) showed that mobile phones have clearly become a daily life necessity since 2005, when only 20% of population in developing countries were mobile phone subscribers compared with 80% in developed countries. But this gap was sharply narrowed in the past 10 years with the level of mobile service subscribers in developing countries surging to 85% by 2015 while those in developed countries jumping to 120% which clearly demonstrated the success of providing people with adequate mobile phone access. (Fig. 1)



**Figure 1** Subscription of mobile phone services in developing and developed countries during 2005-2015 [2].

After the 20th century, access to high-speed broadband Internet has gained an increasingly significant role, and equality of access to high-speed broadband Internet has become a key factor for defining digital divide. A comparison of numbers of Internet subscribers in developing and developed countries reveals, however, that the gap between the two remains wide. (Fig. 2)

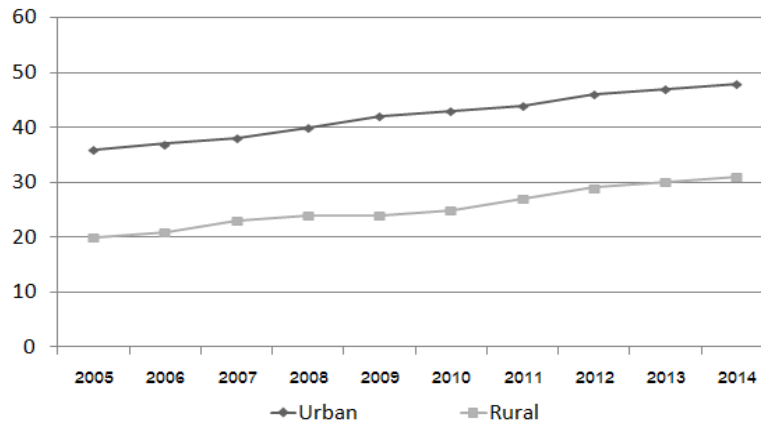


**Figure 2** Numbers of Internet subscribers in developed and developing countries during 2005-2015 [2].

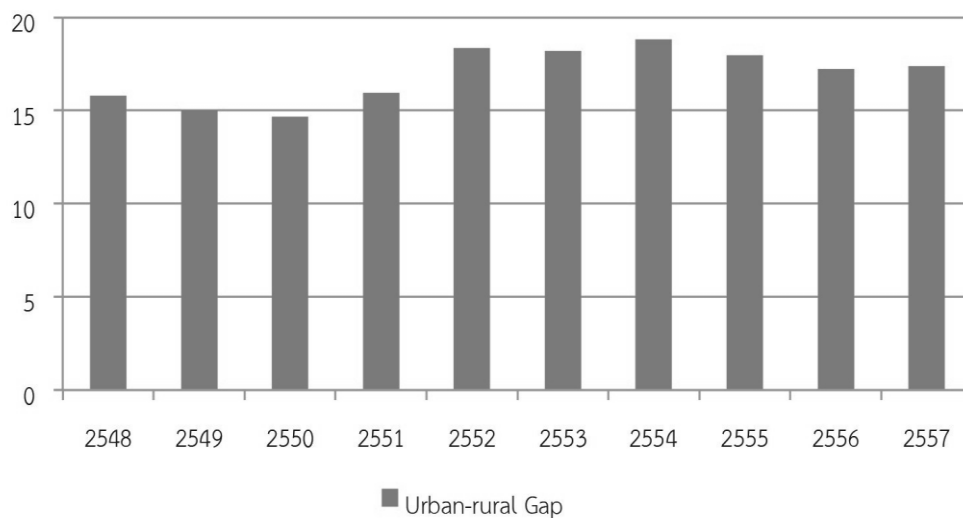
Even in developed countries, unequal access to information technology, or digital divide, is seen in different areas, namely in different regions and localities, urban and rural areas, among groups of population with different educational, economic and social backgrounds, among countries with highly industrialized economies and developing countries. Digital divide may come in the form of computers with low efficiency, low-speed Internet connections based on outdated technology, as well as limited access to quality content. Recent studies and research showed that measuring digital divide by the numbers of service subscribers and communication equipment alone would not be sufficient. It should also involve at least 3 more factors namely information accessibility, information utilization, and information receptiveness, on top of the communication equipment. Subscribers need to know how to utilize available information, which leads to the necessity of arranging information in user-friendly formats to help subscribers optimize utilization of technology.

### 3. DIGITAL DIVIDE IN THAILAND

Digital Divide can be defined in various ways. In terms of computer and Internet utilization by service subscribers that are split into 2 groups based on location of their residence: people residing within municipal boundaries are classified as in urban areas, and those outside municipal boundaries are in rural areas. Statistics compiled by the National Statistical Office on household utilization of information and communication technology revealed that during 2005-2014, computer users increased steadily in number both in urban and rural areas. In urban areas, computer users rose from 35.5% of the population in 2005 to 47.8% in 2014, while those in rural areas the percentage rose from 19.7% to 30.4% in the same period (Fig. 3). However, the gap of urban and rural computer users during this period remained at a relatively wide margin of approximately 15-19%, although this urban-rural gap showed signs of narrowing slightly after 2011. (Fig. 4)

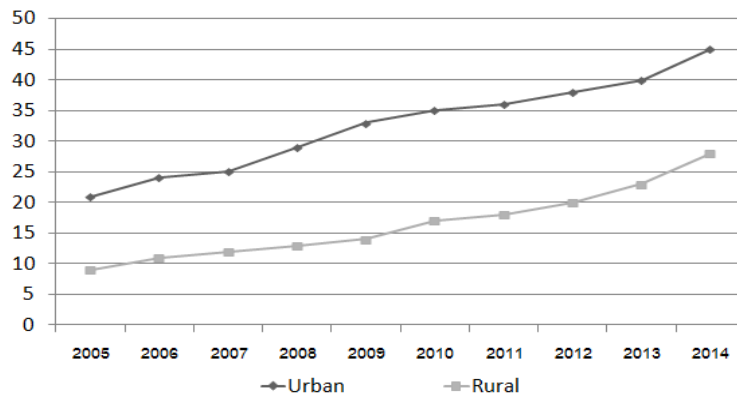


**Figure 3** Levels of computer utilization in urban and rural areas during 2005-2014 (percentage) [3]

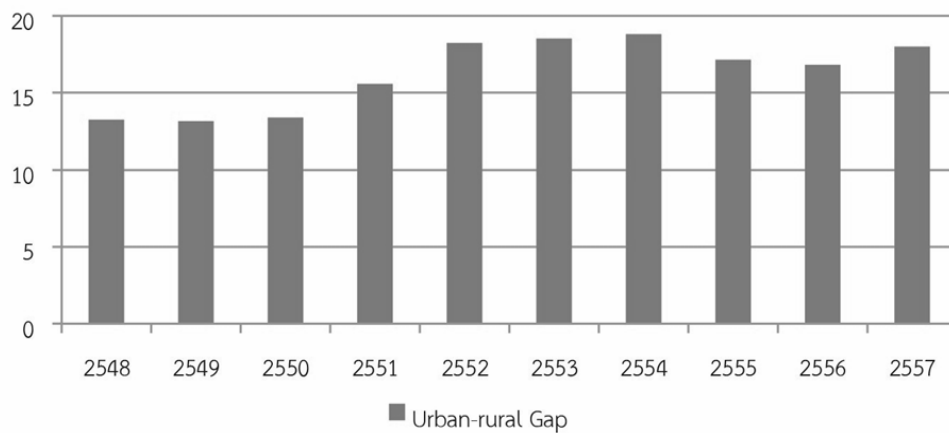


**Figure 4** The gap of computer utilization between urban and rural areas during 2005-2014 (percentage) [3]

The survey by the National Statistical Office on public subscription of Internet services through mobile and fixed phone networks showed that Thais steadily and increasingly subscribed to Internet services both in urban and rural areas. In urban areas, Internet subscription increased from 21.2% of the population in 2005 to 44.9% in 2014, and in rural areas from 8% to 26.9% in the same period (Fig. 5). However, the gap of urban and rural computer users during this period remained at a relatively wide margin of approximately 13-19%, and this urban-rural gap showed signs of widening further in 2011 mainly due to a projected rise in subscription of mobile Internet services in urban areas. (Fig. 6)



**Figure 5** Levels of Internet service subscription in urban and rural areas during 2005-2014 (percentage) [3]



**Figure 6** The gap of Internet subscription in urban and rural areas during 2005-2014 (percentage) [3]

#### 4. CONCLUSION AND POLICY GUIDELINES

Digital divide may not be new but its definition has dynamically changed with time. Initially, it meant inequality of access to communication equipment such as fixed line or mobile phones. Later the term digital divide referred more to access to Internet services which help develop and raise output efficiency and cut costs of operating businesses.

Today viewing digital divide just in terms of equipment or quantitative factors may not be sufficient. In analyzing digital divide, one needs to give attention to qualitative factors namely access to information and varying degrees of readiness to exploit these data and information.

The survey of the National Statistical Office found that the gap of using computers and Internet between urban and rural areas in Thailand had been large with materially important implications, especially the very widespread use of Internet in urban areas, while growth of using Internet in rural areas remained limited. The result of this survey suggested that digital divide existed among populations of different localities, and that it was not only a national problem but also a development barrier globally.

At the end of 2016, operators for 900MHz, 1800MHz, 2100MHz mobile phone services could offer 3G and 4G broadband services covering at least 90% of the population, and it is expected that the number of Internet users connected through mobile phones will rise especially in rural areas. It will be interesting to see if this development will help narrow the digital divide. However, fixed line Internet networks still retain their important role in digital economies that require stable, limitless high-speed Internet connections. Government agencies should support and encourage building of telecommunication networks that could adequately serve different regions of Thailand, and supervise upstream service providers which operate their own telecommunication networks so as to promote competition in the downstream markets where operators and service providers should fully benefit from technological advances on equal terms.

Basically, in Thailand, the government and telecommunications regulator play a key role in encouraging fair market competition as the primary means to extend access and connections to ICT services and mobile communications [4]. Universal service funds should play a role in the provision of access to communications and should only be adopted to extend coverage to very remote or high cost areas, where it is not commercially viable to build networks without subsidies. Based on the ITU Measuring Information and Society Report 2015 [5], the study shows that, in Thailand, mobile is the feasible and practical solution to provide universal access and universal services. Therefore, with providing supportive regulatory policies, it will be possible to reach close to 100% population coverage via mobile networks to reduce digital divide in Thailand.

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